June 16.

JOHN W. LUBBOCK, Esq., V.P. and Treasurer,

succeeded by

HIS ROYAL HIGHNESS THE DUKE OF SUSSEX, K.G.,

President, in the Chair.

Griffith Davis, Esq. was elected a Fellow of the Society.

The following Presents were received, and thanks ordered for them :—

Trigonometrical Survey of Great Britain and Ireland.—Sheets 41 and 54 (Parts of Carmarthenshire, Worcestershire, and Warwickshire). 5 *Maps.—Presented by the Hon. Board of Ordnance.*

Proceedings of the Geological Society. No. 21. 8vo.—*The Society.*

A Treatise on Algebra. By the Rev. George Peacock, M.A., F.R.S. 8vo.—*The Author.*

On the Health of the Royal Navy, at the End of the 18th and Beginning of the 19th Century: with Practical Illustrations. By Sir Gilbert Blane, Bt. F.R.S. 8vo.—*The Author.*

Reflections on the present Crisis of Public Affairs; with an Enquiry into the Causes and Remedies of the existing Clamours, and alledged Grievances of the Country. By Sir Gilbert Blane, Bt. F.R.S. 8vo.—*The Author.*

Catalogue of Oriental Manuscripts purchased at Aleppo, Damascus, Cairo, and Constantinople, by the assistance and recommendation of the late Mr. J. L. Burckhardt. 4to.—*John Lee, LL.D., F.R.S.*

Synopsis Reptilium; or Short Descriptions of the Species of Reptiles. By John E. Gray, Esq. 8vo.—*The Author.*

An engraved Portrait of John Taylor, Esq. F.R.S. Engraved by Turner from the Painting by Sir Thomas Lawrence.—*Mrs. Taylor.*

A Lithographic Portrait of Major-Gen. Hardwicke, F.R.S. From the Painting by Lucas.—*John E. Gray, Esq.*

Mémoire sur la Propagation du Mouvement dans les Milieux Élastiques. Par M. Poisson. 4to.—*Baron Poisson, For. Memb. R.S.*

Mémoire sur le Mouvement de deux Fluides Élastiques superposés. Par M. Poisson. 4to.—*The Author.*

Åminnelse-Tal öfrer Kongl. Vetenskaps-Academiens Framlidne Ledamot, Herr Adolf Murray, M.D. Af dess Ledamot Erik Gadelius, M.D. 8vo.—*The Author.*

Tal om Sveriges naturförhållnden och om den inflytelse de äga på dess näringar och slöjder. Al Carl Arosenius. 8vo.—*The Author.*

A paper was read, "On the Tides in the Port of London." By J. W. Lubbock, Esq., V.P., and Treas. R. S.

This paper contains a discussion of observations of the tides made at the London Docks, and registered in various Tables, showing

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the time and height of high water, not only at different periods of the moon's age, but also for the different months of the year, for every minute of the moon's parallax, and for every three degrees of her declination. The tables themselves were registered by Mr. Dessiou of the Admiralty: but the arrangement of the tables and the methods employed are due to the author. The tides in the river Thames are extremely regular; and as the rise is considerable, the observations on them are easily made. Those at the London Docks present an uninterrupted series from the opening of the Docks in 1804 to the present time: which is more extensive than any extant, with the exception only of that made at Brest by order of the French Government. Some observations are also given of the tides made during one year at the East India Docks, under the superintendence of Captain Eastfield, and which were undertaken at the suggestion of the author, and made with extreme care.

The author gives an account of the mode by which the several tables were constructed; and enters at length into the various mathematical considerations which the subject involves.

The author was enabled, by the kindness of the Chairman and Directors of the London Dock Company, to present to the Society the books containing the complete series of original observations on the tides referred to in this paper.

A paper was read, "On the Friction of Fluids." By George Rennie, Esq., V.P.R.S.

The object of the author in this paper is to trace the relation subsisting between the different quantities of water discharged by orifices and tubes, and the retardations arising from the friction of the fluid. The results of the experiments hitherto made with a view of ascertaining the effects of the friction attending the mutual motion of solids and fluids, are exceedingly discordant, and therefore undeserving of confidence. Whether, for example, the retardation from friction be proportional to the surfaces, or to the velocities, are points by no means satisfactorily determined.

The experiments of the author were designed to measure the retardations experienced by solids moving in fluids at rest; and of fluids moving over solids. For this purpose, he employed a cylinder of wood, about eleven inches in diameter and two feet in length, traversed by an iron axle, upon the upper part of which a small pulley was fixed. A fine flexible silken cord was wound round the pulley, at one end, and had a weight attached to the other end. A frame was provided, allowing the apparatus to slide up and down; and the cylinder to be immersed at various depths into the river Thames. When the velocities were small, the retardation was found to be nearly as the surface: but with great velocities it appears to have but little relation to the extent of the surface immersed. The resistances of iron discs and wooden globes revolving in water were found to be as the squares of the velocities.

From the experiments made on the quantities of water discharged by orifices of different shapes and sizes from vessels kept constantly